Geosciences

Overview

Geosciences at the INEEL includes the Applied Geosciences Department and the Geosciences Research Department, and focuses on six mutually supportive activities:

- Coupled reactive transport of chemical species
- Environmental (atmospheric, surface, and subsurface) fate and transport modeling
- Energy research and development
- Sensing and imaging of the subsurface environment
- Environmental site characterization and remediation
- Air-pollutant measurement and transport.

These activities or focus areas capitalize on core INEEL technical strengths in hydrology, geochemistry, reservoir engineering, geology, soil physics, atmospheric science, geophysics and seismology. Although much of the work is related to understanding physical-chemical processes and the ultimate fate of contaminants and fluids in the subsurface, each area addresses unique problems and supports a varied customer base.

Capabilities of the two geosciences departments have been significantly increased in the last three years by acquisition of new Ph.D.-level staff through funding and in support of Subsurface Science research. The geosciences department will continue to support Subsurface Science Research in the future. With the creation of the Geocentrifuge Research Laboratory, the INEEL gained a new, unique research tool to be applied to scientific and engineering problems.

Services

Geosciences provides basic and applied research, technology development and deployment, and technical consultation and support to various Department of Energy (DOE) offices including Science, Fossil Energy, and Energy Efficiency, and to other DOE sites. This research also performs work for the Environmental Protection Agency, Bureau of Reclamation, and Army Corps of Engineers, and supports the Idaho Completion

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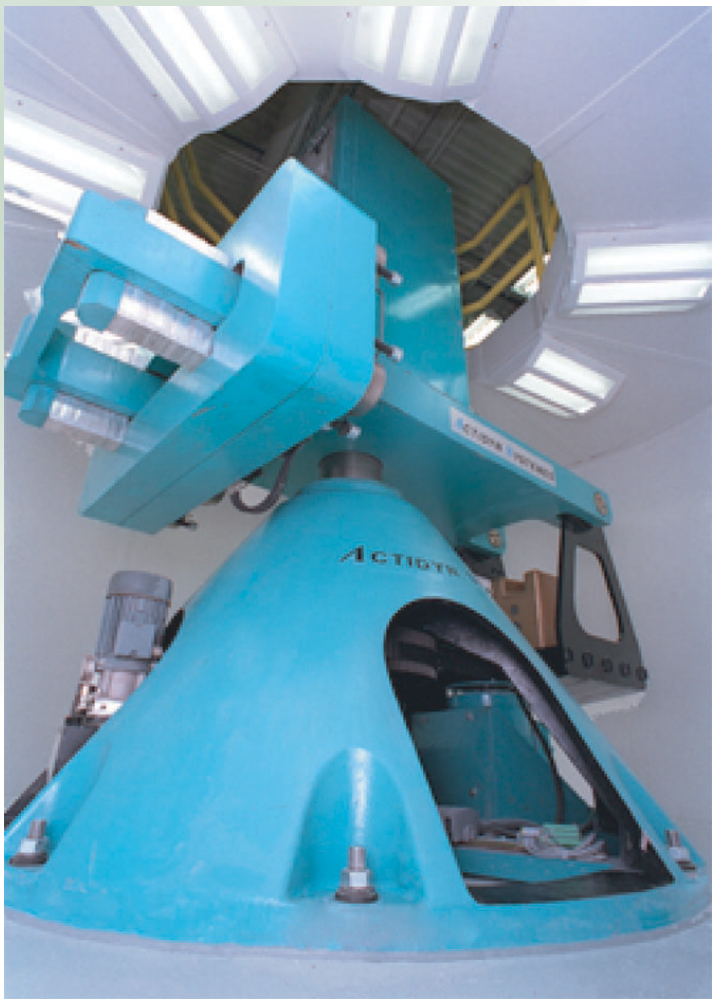

Actidyn Systemes Model C61-3 civil engineering centrifuge used to study, in hours or days, the effects of decades of gravity-induced fluid movement in the subsurface.

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Project. The INEEL foresees additional opportunities with all of these customers.

Future Geosciences goals include:

- Continue to provide technical expertise and support to the Idaho Completion Project and to other operations of DOE's Office of Environmental Management
- Maintain expertise and funding for fundamental geoscience research in support of subsurface science and missions of DOE's Office of Science
- Expand programs in geophysics and reservoir engineering in support of DOE's Offices of Fossil Energy and Energy Efficiency and of various departments in other federal agencies
- Support the INEEL's nuclear energy mission by providing earth science expertise for reactor siting studies
- Expand programs in surface and atmospheric research to contribute to current and future science needs of regulatory agencies and industry
- Develop programs and enhance existing relationships with other federal agencies including the Department of Defense and the Environmental Protection Agency
- Develop new business areas that synergistically combine the basic and applied research capabilities of geosciences with those of other INEEL programs.

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